Anthony B. Davis

Research Scientist
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EDUCATION:

Ph.D.	Physics (atmospheric radiation)	McGill University, 1992
M.S.	Physics (astrophysics)	Université de Montréal, 1980
B.Sc.	Physics	Université Pierre & Marie Curie (Paris VI), 1977

EMPLOYMENT:

02/2009–present: Jet Propulsion Laboratory, California Institute of Technology
11/1997–01/2009: Los Alamos National Laboratory, Space & Remote Sensing Group
11/1992–10/1997: NASA – Goddard Space Flight Center, Climate & Radiation Branch
05/1992–10/1992: *NSERC Postdoctoral Research Fellow*, Atmospheric Environment Service
1981–1986: *teaching* at Concordia University, Collège de Sherbrooke, Université de Sherbrooke
1977–1986: *lecturing & show design/scripting* at Dow Planetarium of Montreal

RESEARCH EXPERIENCE/INTERESTS:

- Remote sensing signal physics applied to the Earth's cloudy atmosphere;
- Constrained 3D cloud shape reconstruction using multi-pixel/multi-angle observations;
- Multi-spectral 1D and 3D retrievals of cloud and aerosol properties using polarization;
- Cloud probing with multiple-scattering/wide-field-of-view lidar;
- Cloud property retrieval using high-resolution oxygen A-band spectroscopy;
- Theoretical and computational radiative transfer in spatially complex scenes (3D clouds, cloud/surface systems and/or rough terrain), steady-state or time-dependent;
- Optical diagnostics and radiation energetics for realistic 3D clouds and cloud systems;
- Climate impact of clouds through radiation & hydrology, and their interaction with aerosols;
- Multi-scale/fractal and multi-moment statistics of nonlinear atmospheric processes using wavelets, emphasizing cloud formation, evolution, and precipitation;
- Sampling issues, such as ground-based stations versus satellite platforms;
- Cloud-process model validation using remote sensing data.

COMMUNITY SERVICE:

- Reviewer of manuscripts and proposals (NASA, NSF, DOE);
- Guest-editor of a Special Issue of *Journal of Quantitative Spectroscopy & Radiative Transfer*;
- Co-editor/co-author for a Spinger monograph on 3D radiative transfer;
- Organization of special sessions at American Geophysical Union (AGU) and American Nuclear Society (ANS) meetings, member of technical committees or working groups at AGU, American Meteorological Society (AMS), and DOE's Atmospheric Radiation Measurement (ARM) program.

MEMBERSHIP:

American Geophysical Union (since 1991)
Optical Society of America (since 1997)
American Meteorological Society (since 1998)